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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/588,617

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Claude L. Bertin

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1077

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EXAMINER

NGUYEN, TRUNG Q

ART UNIT

PAPER NUMBER

2829

DATE MAILED: 04/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/588,617

Applicant(s)

BERTIN ET AL. 

Examiner

Trung Q. Nguyen

Art Unit

2829

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on amendment filed on 01/20/06.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7, 11-15, 21-26 and 28-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 11-15, 21-26 and 28-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-7, 11-15 and 21-26, 28-29 and 30-31 rejected under 35 U.S.C. 103(a) as being unpatentable over Hembree (U.S. 6,504,389) in view of Mok et al. (U.S. 6,791,171).

Regarding claim 1, Hembree discloses in Figs. 4A –B a plurality of semiconductor devices 44, a device carrier 46-48, carrier having interconnect wiring 52 and 94 therein sufficient for both operational testing and packaging of semiconductor devices 44; attaching semiconductor devices 44 to carrier 46-48 (see Fig. 4B); testing devices via wiring 60 and 62 of Fig. 4A; and dividing carrier into a plurality of components wherein each component contains at least one semiconductor device (Fig. 4B wherein semiconductor device 44 placing in different spots).

Hembree fails to disclose a carrier used for burn-in testing. However, Mok et al. disclose a carrier 115, wherein this wafer carrier 115 can be used for burn-in testing is also used in the end-use application, without removing the device from the carrier (column 21, lines 25-35).

Art Unit: 2829

Therefore, at the time of the subject invention, it would have been obvious for a person of ordinary skill in the art to use the carrier 115 as taught by Mok et al. in the device of Hembree for the purpose of combines testing, burn-in and end-use packaging without removing the device from the carrier.

Regarding claims 2-3, Hembree discloses in Figs. 4A –C installing one component on a next level of assembly (semiconductor device 44 placed in carrier 48 and install component 42 without separating device from carrier 46-48).

Regarding claim 4, Hembree discloses in Fig. 8A the printed circuit board included in carrier 46-48.

Regarding claims 5, 14 and 31, Hembree discloses in Figs. 4A and 6, wherein semiconductor device 104 comprising leads (portion of 120) and wherein carrier 46-48 comprising contacts for external connection 52 of Fig. 4A.

Regarding claims 6-7 and 11-12, Hembree discloses in Figs. 4A and 6 wherein lead reduction mechanism (connection between lead 120 of semiconductor device 104 of Fig. 6 and external connection 52 of Fig. 4A) comprising a built in self-test engine 58-62 of Fig. 4A.

Art Unit: 2829

Regarding claims 13 and 28-29, Hembree discloses in Figs. 4A running semiconductor devices 44 in carrier 46-48 (see Fig. 4B); testing devices via wiring 60 and 62 of Fig. 4A; and dividing carrier into a plurality of components via independently and simultaneously.

Regarding claims 14-15 Hembree discloses in Figs. 4A-B attaching semiconductor devices 44 to carrier 46-48 (see Fig. 4B); testing devices via wiring 60 and 62 of Fig. 4A; and dividing carrier into a plurality of components wherein each component contains at least one semiconductor device (Fig. 4B wherein semiconductor device 44 placing in different spots); and dividing carrier into separate multi-chip final assemblies 42 of Fig. 4B

Regarding claims 21-22, Hembree discloses in Figs. 4A-B wherein carrier comprises connectors 94, 52 and 58 on two sides of carrier (see Fig. 4A) and encapsulating semiconductor devices 44 via cap 55 or 88.

Regarding claims 23-26, Hembree discloses in column 12, lines 16-38, wherein the system identifying, repair and remove defective semiconductor devices.

Regarding claim 30, Hembree discloses in Figs. 4A –B a device carrier 46-48 wherein carrier having interconnect wiring therein 10, 94 and 58 for testing and packaging, a plurality of semiconductor devices 44, carrier having

Art Unit: 2829

interconnect wiring 52 and 94 therein sufficient for both operational testing and packaging of semiconductor devices 44; attaching semiconductor devices 44 to carrier 46-48 (see Fig. 4B); testing devices via wiring 60 and 62 of Fig. 4A; and dividing carrier into a plurality of components wherein each component contains at least one semiconductor device (Fig. 4B wherein semiconductor device 44 placing in different spots).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Trung Nguyen** whose telephone number is **(571) 272-1966**. The examiner can normally be reached on Monday through Friday, 8:30AM – 5:00PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Fahmy, Wael** can be reached at (571) 272-1705.

Trung Nguyen
Patent Examiner
Group Art Unit 2829
March 31, 2006

 03/31/06
PARESH PATEL
PRIMARY EXAMINER